



7S7

TRIODE-HEPTODE CONVERTER

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GENERAL DATA**Electrical:**

Heater, for Unipotential Cathode:

Voltage. 6.3[□] ac or dc voltsCurrent. 0.3^{□□} ampDirect Interelectrode Capacitances:[○]Heptode Grid No.1 to Heptode Plate . . . 0.03 max. μ fHeptode Grid No.1 to Triode Plate. . . . 0.1 max. μ fHeptode Grid No.1 to Triode Grid &
Heptode Grid No.3 . . . 0.35 max. μ fTriode Grid & Heptode Grid No.3 to
Triode Plate 1 . . μ fHeptode Grid No.1 to All Other
Electrodes (RF Input) 5 . . μ fHeptode Plate to All Other
Electrodes (Mixer Output) 8 . . μ fTriode Grid & Heptode Grid No.3 to All
Other Electrodes Except Triode
Plate (Oscillator Input) 7 . . μ fTriode Plate to All Other Electrodes
Except Triode Grid & Heptode
Grid No.3 (Oscillator Output). 3.5 . . μ f[○] With external shield connected to cathode.**Mechanical:**

Mounting Position. Any

Maximum Overall Length 2-25/32"

Maximum Seated Length. 2-1/4"

Maximum Diameter 1-3/16"

Bulb T-9

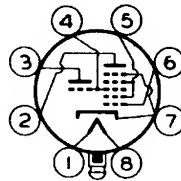
Base Lock-in 8-Pin

Basing Designation for BOTTOM VIEW 8BL

Pin 1 - Heater

Pin 2 - Heptode Plate

Pin 3 - Triode Plate

Pin 4 - Triode Grid,
Heptode
Grid No.3Pin 5 - Heptode
Grids No.2
& No.4Pin 6 - Heptode
Grid No.1Pin 7 - Cathode,
Heptode
Grid No.5,
Internal
ShieldPin 8 - Heater
Plug - Base ShellCONVERTER**Maximum Ratings, Design-Center Values:**

HEPTODE PLATE VOLTAGE. 300 max. volts

HEPTODE GRIDS-No.2 & No.4
(SCREEN) VOLTAGE . . . 100 max. voltsHEPTODE GRIDS-No.2 & No.4
SUPPLY VOLTAGE 300 max. volts[□] Nominal voltage = 7.0 volts.^{□□} Nominal current = 0.32 ampere.

DEC. 30, 1947

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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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HEPTODE GRID-No.1 (CONTROL- GRID) VOLTAGE:

Positive bias value.	0 max.	volts
HEPTODE PLATE DISSIPATION.	0.6 max.	watt
HEPTODE GRIDS-No.2 & No.4 DISSIPATION.	0.4 max.	watt
TRIODE PLATE VOLTAGE.	175 max.	volts
TRIODE PLATE-SUPPLY VOLTAGE.	300 max.	volts
TRIODE PLATE DISSIPATION.	1 max.	watt
TOTAL CATHODE CURRENT.	14 max.	ma
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	90 max.	volts
Heater positive with respect to cathode.	90 max.	volts

Typical Operation:

Heptode Plate Voltage.	100	250	volts
Heptode Grids-No.2 & No.4 Voltage.	100	100	volts
Triode (Oscillator) Plate-Supply Volt.	100	250†	volts
Heptode Grid-No.1 Voltage.	-2	-2	volts
Cathode-Bias Resistor.	240	195	ohms
Triode Grid & Heptode			
Grid-No.3 Resistor.	50000	50000	ohms
Heptode Plate Current.	1.9	1.8	ma
Heptode Grids-No.2 & No.4 Current.	3	3	ma
Triode Plate Current.	3	5	ma
Triode Grid & Heptode			
Grid-No.3 Current.	0.3	0.4	ma
Heptode Plate Resistance.	0.5	1.25	megohms
Conversion Conductance.	500	525	μmhos
Conversion Conductance (Approx.) for			
heptode grid-No.1 bias of -21 volts.	2	2	μmhos
Total Cathode Current.	8.2	10.2	ma

† Applied through a 20000-ohm dropping resistor, properly bypassed.

NOTE: The transconductance of the triode section, not oscillating, is approximately 1650 μmhos under the following conditions: triode plate volts = 100, triode grid and heptode grid No.3 volts = 0. Under the same conditions, triode plate current is 6.5 ma., triode plate resistance is 11000 ohms, and amplification factor is 18.

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